

REMARKS

Applicant has cancelled withdrawn claims 10-34 and 38-40 without prejudice. Applicant expressly reserves the right to file one or more divisional applications based on one or more of the claim groupings proposed by the Office in the Office Action mailed July 12, 2007. Claims 3, 6, and 35-37 were cancelled previously. Claims 46-53 are newly presented. Thus, claims 1, 2, 4, 5, 7-9, and 41-53 are pending, with claims 1, 46, and 50 being the independent claims. The Office Action includes rejections of certain of Applicant's claims for purported obviousness. For the reasons to follow, Applicant traverses the rejections included in the Office Action, and respectfully submits that all pending claims are allowable, and the application is now in condition for allowance.

Rejection for Obviousness - Hayse in view of Kinzenbaw and Gust

Claims 1, 2, 4, 5, 7, 8, and 44 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 2,905,254 to Hayse ("Hayse"), in view of U.S. Patent No. 5,346,019 to Kinzenbaw et al. ("Kinzenbaw") and U.S. Patent No. 6,125,775 to Gust ("Gust"). According to the Office Action, Hayse purportedly discloses certain features recited in Applicant's claims but "fails to disclose a piston and cylinder assembly including a cylinder connected to the frame and a movable piston rod connected to the axle and a pillar connected to the frame and a column inside the pillar and extending to the axle." Office Action, page 3.

The Office Action then asserts that "Kinzenbaw . . . discloses a pillar (118) and a column (100b) inside the pillar (118) . . . [and] teaches that his lifting mechanism . . . is desirable because it allows the operator to rotate the frame about a vertical axis for

transport on a road.” Id. The Office Action then alleges that “[i]t [purportedly] would have been obvious to one of ordinary skill in the art . . . to include the lifting mechanism (pillar, column and hydraulic cylinder) of Kinzenbaw et al. in the implement of Hayse to make transport of the frame easier by allowing the operator to transport the frame on narrow roads.” Id.

The Office Action continues by stating that “the combination of Hayse and Kinzenbaw et al. . . . fails to specifically disclose that the rod and the pillar/column are attached at the axle.” Id. The Office Action then asserts that Gust “discloses that it is known in the art to attach the rod end of a hydraulic cylinder (54) on the wheel axle for moving the frame into a transport position.” Id. Finally, the Office Action asserts that “[i]t [purportedly] would have been obvious . . . to attach the column/pillar and hydraulic cylinder at the wheel axle in the combination of Hayse and Kinzenbaw et al. as taught by Gust so that the weight of the frame and implement is supported directly by the ground support so as to reduce strain on the machine when in the transport position.” Id. Respectfully, Applicant disagrees with the assertions made in the Office Action for reasons to be discussed below¹, and maintains that no prima facie case of obviousness has been established.

Hayse discloses a wheel mounted tandem disc harrow including a frame 2 (e.g., title; col. 2, line 8; Fig. 1). The frame 2 includes, inter alia, members 7, 8, 9, 10, 11, and 12 (e.g., col. 2, lines 8-17; Fig. 1). Hayse’s frame also includes a rock-shaft 17 “oscillatably carried by the frame, [and] cooperat[ing] with the other members of the

¹ The Office Action includes a number of statements and characterizations of the references and Applicant’s claims with which Applicant does not necessarily agree. Unless otherwise expressly stated, Applicant declines to accede to any such statements and characterizations in the Office Action.

frame in maintaining a substantially rigid assembly when the members of the frame are connected together, as by welding or the like" (e.g., col. 2, lines 36-40; Fig. 1).

Accordingly, rockshaft 17 of Hayse, although apparently movable within the members 18, 19 (not mentioned in Hayse's description but illustrated in Fig. 1, for example), is a part of the rigid assembly forming frame 2.

Kinzenbaw discloses an implement including a lift frame 20 for raising and lowering the implement relative to a carrier frame 12 (e.g., col. 4, lines 5-28; Figs. 1b and 1c). The lift frame 20 may raise the implement to an intermediate position, for example for turning at the end of a row (e.g., col. 4, lines 58-68), and may raise the implement to a fully raised position where the implement may be rotated to a transport position (e.g., col. 5, lines 1-17). As seen in Figs. 3b and Fig. 5 of Kinzenbaw, for example, a sleeve 118 and lift post 100 are slidably arranged to enable the lift frame 20 (with implement) to raise and lower relative to the carrier frame 12 via a hydraulic cylinder 108 (see also, e.g., col. 5, line 57 to col. 6, line 9).

In order to establish a prima facie case of obviousness, there must be a clear articulation of the reasons why the claimed invention would have been obvious. See, for example, MPEP § 2142. Impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art, not from Applicant's disclosure. Id. The proposed modification or combination of the prior art must not change the principle of operation of the prior art invention being modified. MPEP § 2143.01 VI.

The Office Action asserts the purported obviousness of "includ[ing] the lifting mechanism (pillar, column and hydraulic cylinder) of Kinzenbaw et al. in the implement

of Hayse to make transport of the frame easier by allowing the operator to transport the frame on narrow roads.” Office Action, page 3. This assertion evidences an impermissible hindsight analysis because there is no rationale explaining how such a modification might be accomplished in Hayse. The Office Action improperly attempts to shift the burden to Applicant to prove non-obviousness rather than providing any evidence or meaningful explanation attempting to support the Office Action’s obviousness assertion. The rock-shaft 17 of Hayse (which the Office Action has apparently equated with the axle) is designed to be rigidly assembled to the frame 2 to help “in maintaining a substantially rigid assembly” (col. 2, lines 36-40), with the height of the frame 2 relative to the soil controlled by jack mechanism 75 rocking the rock-shaft 17 to swing wheels 70, 71 (e.g., col. 3, line 65 to col. 4, line 5; Figs. 1 and 3). Under the hypothetical arrangement proposed in the Office Action “to include the lifting mechanism of Kinzenbaw et al. in the implement of Hayse,” it becomes immediately apparent that such a modification would entail a complete restructuring of Hayse, thus changing the principle of operation of Hayse.

The rock-shaft 17 of Hayse, supporting the rigidly connected ground wheels 70, 71, “cooperates with the other members of the frame in maintaining a substantially rigid assembly” (col. 2, lines 37-39), and that assembly includes the disc gangs 3, 4, 5, and 6 (e.g., Fig. 1). If one having ordinary skill in the art were to attempt to “include the lifting mechanism of Kinzenbaw et al. (pillar, column and hydraulic cylinder) in the implement of Hayse” as suggested in the Office Action, it is not at all apparent, and the Office Action does not explain, how one having ordinary skill in the art would achieve such a modification of Hayse. The unitary rigid frame assembly of Hayse, including the rock-

shaft 17 with the ground wheels 70, 71, stands apart from the relatively movable frame assembly of Kinzenbaw, including lift frame 20 and carrier frame 12 with support wheels 34a-34d, as a divergent mechanical arrangement. These two disclosures (Hayse and Kinzenbaw) do not provide teachings that fit together like pieces of a puzzle. Cf. KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1742; 82 USPQ2d 1385, 1397 (2007) ("in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle"). As a matter of fact, the two disclosures are not even pieces of the same puzzle.

Neither Hayse nor Kinzenbaw discloses or suggests, and no plausible combination of Hayse and Kinzenbaw will result in, "an axle connected to [a] frame . . . [and] a piston and cylinder assembly including a cylinder connected to the frame and a movable piston rod connected to the axle . . . [and] a pillar connected to the frame and a column inside the pillar and extending to the axle . . . [and] discs attached to the frame . . . and a controller associated with the piston and cylinder assembly and configured to control movement of the frame via the piston and cylinder assembly to move the discs with the frame and to move the frame and the discs with respect to the axle," as recited in claim 1.

Accordingly, a prima facie case of obviousness has not been established because any hypothetical combination of Kinzenbaw and Hayse whereby Hayse "include[s] the lifting mechanism of Kinzenbaw" would require impermissible hindsight reconstruction of Hayse so as to change Hayse's principle of operation. See KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. at 1742; 82 USPQ2d at 1397 ("[a] factfinder should be

aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning"). See again, e.g., MPEP 2143.01 VI.

The Office Action further asserts the purported obviousness of "attach[ing] the column/pillar and hydraulic cylinder at the wheel axle in the combination of Hayse and Kinzenbaw et al. as [purportedly] taught by Gust so that the weight of the frame and implement is supported directly by the ground support so as to reduce strain on the machine when in the transport position." Office Action, page 3. Gust discloses the use of "a hydraulic cylinder 54 which is coupled to [a] front gauge wheel" to control depth of seed insertion devices. See, e.g., Gust at col. 3, lines 31-33 and Fig. 2.

Notwithstanding the assertions in the Office Action, the arrangement of a hydraulic cylinder associated with a gauge wheel disclosed in Gust does not suggest any plausible, obvious modification of Hayse as already hypothetically modified by Kinsenzbaw. Plainly, impermissible hindsight has again entered the analysis.

The purportedly obvious combination of Hayse, Kinzenbaw, and Gust is a piecing together of disparate features that only would have been assembled in the manner suggested in the Office Action after a reading of Applicant's disclosure. The proposed modifications to Hayse would change the principle of operation of the harrow disclosed in Hayse, and would not have been predictable to one having ordinary skill in the art.

For the reasons stated above, claim 1 should be allowed. Claim 2, 4, 5, 7, 8, and 44 each depend, either directly or indirectly, from claim 1, and should be allowed for at least the same reasons that claim 1 should be allowed and because they each recite additional features that, collectively, are not disclosed by the references.

Claims 9 stands rejected under 35 U.S.C. § 103(a) purportedly as being unpatentable over Hayse in view of Kinzenbaw and Gust “as applied to claims 1 and 8,” and further in view of U.S. Patent No. 3,331,638 to Furth (“Furth”). Claim 9 depends on claim 8 which in turn depends on claim 1. Furth does not cure the deficiencies of the hypothetical combination of Hayse, Kinzenbaw, and Gust, discussed above. Accordingly, claim 9 should be allowed at least for the same reasons that claim 1 should be allowed.

Claim 41 stands rejected under 35 U.S.C. § 103(a) purportedly as being unpatentable over Hayse in view of Kinzenbaw and Gust “as applied to claims 1 and 8,” and further in view of official notice. Claim 41 depends on claim 4 which in turn depends on claim 1. The taking of official notice does not cure the deficiencies of the hypothetical combination of Hayse, Kinzenbaw, and Gust, discussed above. Furthermore, Applicant challenges the taking of official notice to the extent that it implies that plastic would have been an obvious choice of material in an agricultural harrow such as that disclosed by Hayse (and hypothetically modified in some way by Kinzenbaw and Gust) because of the high likelihood of contact with abrasive soil particles. Indeed, it is likely that Kinzenbaw does not disclose plastic because of the risk of abrasion by soil particles during operation of the equipment in Kinzenbaw. The fact that plastic may be a generally known material does not support the taking of official notice, coupled with an assertion of “select[ion] . . . as a matter of obvious design choice” and “common knowledge” to further modify a hypothetical combination of diverse references. Accordingly, claim 41 should be allowed at least for the same

reasons that claim 1 should be allowed, and because the taking of official notice is improper.

Claims 42 and 43 stand rejected under 35 U.S.C. § 103(a) purportedly as being unpatentable over Hayse in view of Kinzenbaw and Gust "as applied to claims 1 and 8," and further in view of official notice. Claim 42 depends on claim 1 and claim 43 depends on claim 42. The taking of official notice does not cure the deficiencies of the hypothetical combination of Hayse, Kinzenbaw, and Gust, discussed above. Accordingly, claims 42 and 43 should be allowed at least for the same reasons that claim 1 should be allowed. Furthermore, Applicant expressly challenges the taking of official notice in connection with claims 42 and 43.

Claim 42 recites "two pillars connected to the frame, and a column inside each pillar and extending to the axle," and claim 43 recites "a bar extending between the two pillars, and wherein the cylinder of the piston and cylinder assembly is connected to the bar." A hypothetical restructuring of Hayse to include "two pillars connected to the frame, and a column inside each pillar and extending to the axle," and "a bar extending between the two pillars . . . wherein the cylinder of the piston and cylinder assembly is connected to the bar," after Hayse has already hypothetically been modified by Kinzenbaw and Gust, would not be the "mere duplication of the essential working parts of a device" as implied in the Office Action. Instead, were such a restructuring of Hayse to be accomplished, it would be derived from Applicant's disclosure, not from any disclosure, teaching, or suggestion in any of Hayse, Kinzenbaw, Gust, or the purported routine skill involved in duplicating working parts. Applicant notes that even the sliding tube and lift post disclosed in Kinzenbaw alone could not be duplicated without

destroying the rotating function of Kinzenbaw's lift/rotate assembly. The rejection of claims 42 and 43 is based on impermissible hindsight. For these reasons, claims 42 and 43 should be allowed along with claim 1.

Claim 45 stands rejected under 35 U.S.C. § 103(a) purportedly as being unpatentable over Hayse in view of Kinzenbaw and Gust "as applied to claims 1 and 8," and further in view of U.S. Patent No. 3,430,366 to King ("King"). According to the Office Action, "[l]ike the combination, King also [purportedly] discloses a hitch cylinder for a towed implement[, b]ut unlike the combination, King further disclose[s] a cylinder that connects the frame and the hitch that automatically adjusts to changes in the ground contour." The Office Action then asserts that "[i]t [purportedly] would have been obvious . . . to have the hitch cylinder of the combination of Hayse, Kinzenbaw et al. and Gust adjust automatically to the ground contour as [purportedly] taught by King to ensure even working of the field with the discs." Office Action, page 6. Applicant respectfully disagrees.

King discloses a towed implement including a "cylinder 19 [wherein] the direction of flow of . . . hydraulic fluid, to actuate [a] piston rod 20 [is] controlled by [a] control C on the tractor." See, e.g., col. 2, lines 63-65 and Fig. I of King. King does not disclose, teach, or otherwise suggest a "hydraulic piston and cylinder assembly connected between [a] hitch assembly and [a] frame[, and that] is configured to automatically adjust to respond directly to changes in terrain," as recited in claim 45. Rather than disclosing "automatically adjust[ing the hydraulic piston and cylinder assembly] to respond directly to changes in terrain," as recited in claim 45, King discloses a hydraulic cylinder that is "manipulat[ed by] the control C." See, generally, col. 3, lines 44-69, and

see, e.g., col. 3, lines 54, 58, and 61 of King. In other words, King does not disclose an arrangement that "is configured to automatically adjust to respond directly to changes in terrain," as recited in claim 45, because an operator must affirmatively manipulate the control C to effectuate any movement of the hydraulic cylinder.

Claim 45 depends on claim 2 which in turn depends on claim 1, and should be allowed for the same reasons that claim 1 should be allowed. In addition, claim 45 should be allowed because King does not fairly disclose, teach, or suggest a "hydraulic piston and cylinder assembly connected between [a] hitch assembly and [a] frame[, and that] is configured to automatically adjust to respond directly to changes in terrain," as recited in claim 45, and because any hypothetical combination of King with the already hypothetical combination of Hayse, Kinzenbaw, and Gust is plainly based on impermissible hindsight based on a reading of Applicant's disclosure. Furthermore, there is no meaningful explanation in the Office Action as to how such a hypothetical combination of these four disparate references could be achieved. Allowance of claim 45 is respectfully requested.

New Claims

New claim 46 recites features similar to those recited in claims 1 and 42, and should be allowed at least for reasons similar to those explained above for claims 1 and 42. The hypothetical combination of Hayse, Kinzenbaw, and Gust, proposed in the Office Action in connection with claims 1 and 42, does not disclose or suggest

a frame . . . ;

an axle . . . ;

two laterally spaced vertical pillars attached to the frame and connected by a transverse bar;

a column inside each pillar and attached to the axle; [and]

a piston and cylinder assembly connected between the transverse bar and the axle[.]

as recited in claim 46. At least this combination of features is not disclosed, taught, or suggested by Hayse, Kinzenbaw, or Gust, or by any legitimate combination of these three references. Accordingly, claim 46 should be allowed. New claims 47-49 each depend, either directly or indirectly, on claim 46, and should be allowed at least for the same reasons that claim 46 should be allowed, and because they each recite additional feature that, in combination, are not disclosed, taught, or suggested by the references.

New claim 50 also recites features similar to those recited in claims 1 and 42, and should be allowed at least for reasons similar to those explained above for claims 1 and 42. The hypothetical combination of Hayse, Kinzenbaw, and Gust, proposed in the Office Action in connection with claims 1 and 42, does not disclose

a frame . . . ;

a plurality of hollow vertical columns laterally spaced and fixed on the frame;

a pillar movably mounted within each hollow vertical column, each pillar connected at a lower end to an axle including spaced ground engaging wheels; [and]

a piston and cylinder assembly connected between the frame and the axle and configured to move the pillars relative to the columns and to move the axle relative to the frame[.]

as recited in claim 50. At least this combination of features is not disclosed, taught, or suggested by Hayse, Kinzenbaw, or Gust, or by any legitimate combination of

these three references. Accordingly, claim 50 should be allowed. New claims 51-53 each depend, either directly or indirectly, on claim 50, and should be allowed at least for the same reasons that claim 50 should be allowed, and because they each recite additional features that, in combination, are not disclosed, taught, or suggested by the references.

Conclusion


In view of the foregoing remarks, Applicant respectfully requests reconsideration, and allowance of claims 1, 2, 4, 5, 7-9, and 41-53. If for any reason, Examiner McGowan is of the view that a telephone discussion with Applicant's undersigned representative might assist in advancing the prosecution of this application, then she is respectfully invited to telephone the undersigned at **571-203-2757** for such discussion.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: September 24, 2008

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